Implementation and Effectiveness Evaluation of an Opioid Toolkit to Increase Naloxone Prescribing in a Rural Health System

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Background

- Opioid overdose deaths have increased nationally between 2001 and 2016. Overdose deaths can be caused by prescription opioids.
- Naloxone is a medication that can "rescue" patients during an opioid overdose episode, possibly preventing death.
- Despite clear guidelines to co-prescribe naloxone with opioid prescriptions, the rate of naloxone prescribing remains low.
- Fort HealthCare (FHC), a rural health system in Jefferson County, Wisconsin, recently implemented an electronic health record (EHR)-based clinical decision support (CDS) opioid toolkit to alert prescribers of patients at risk of opioid overdose and to prompt a "naloxone co-prescribing alert".
- The CDS opioid toolkit identifies a patient as "high-risk" if they have: concurrent use of an opioid and a benzodiazepine, a high opioid daily dose, underlying mental health disorders, respiratory disorders, active illicit-drug use, and/or opioid overdose history.
- The CDS opioid toolkit was activated in February 2020.

Research Objective

The current study has two aims:

1. To evaluate the effectiveness of the toolkit on prescribing of naloxone to high-risk patients.
2. To understand the perceived acceptability of the toolkit by prescribers and the barriers and facilitators to prescriber adoption of the toolkit.

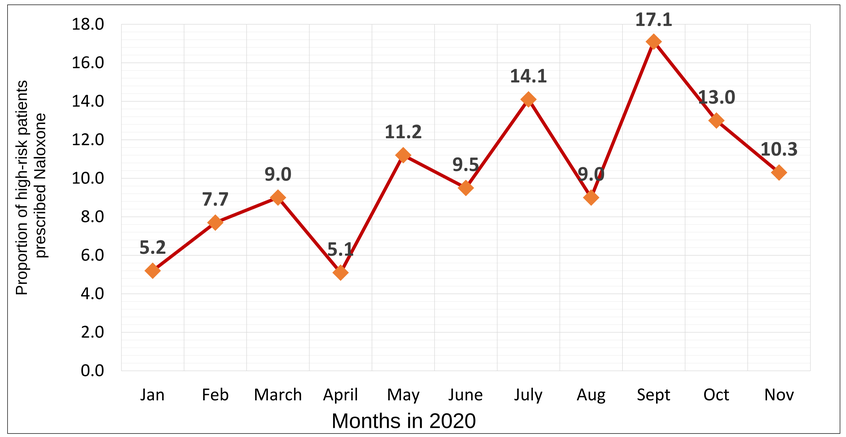
Methods

- *Study Design*: Sequential Explanatory Mixed-methods design
  - Quantitative Phase: The trend in the proportion of high-risk patients prescribed naloxone each month from January to November 2020 was examined. Monthly data were extracted from the EHR.
  - Qualitative Phase: Semi-structured interviews were conducted with prescribers who interacted with the CDS opioid toolkit. The Technology Acceptance Model (TAM) was the conceptual framework that was used to construct the interview guide.
- *Main Outcome Measures*:
  - Effectiveness outcome: Percentage of high-risk patients who were prescribed naloxone
  - Implementation outcomes: Adoption and Acceptability of the toolkit through interviews

Population Studied: All patients with opioid prescriptions written by FHC providers, Prescribers who interacted with the alert

Principal Findings

Figure 1. Proportion of High-Risk Patients that were Prescribed Naloxone



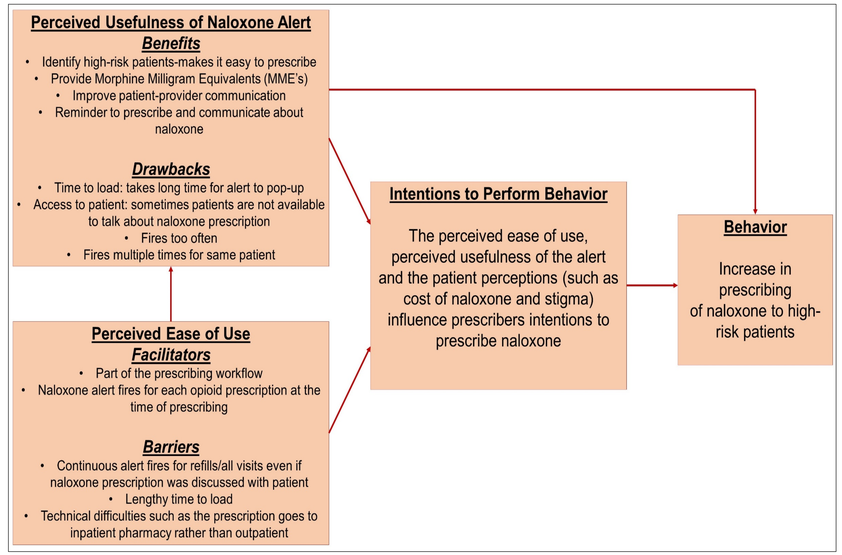
Implementation of the CDS Opioid Toolkit Increased Naloxone Prescribing to High-Risk Patients in a Rural Health System, but needs Improvement.

Notable Quotations from Interviews:

"I think it helps me get closer to my goal of having the naloxone on everybody and I have on opioids that are on more than 50 MMEs a day. I think it's been helpful to remind me to do that. And I think the more I see it the more, I remember it when I am with patients."

"I know that my prescribing of naloxone has gone up since the alert has been there."

Figure 2. Technology Acceptance Model (TAM) Describing the Barriers and Facilitators to Adoption and Acceptability of the Toolkit



Implications for CDS Toolkit Design

- Reminding providers to prescribe naloxone and identifying patients "at risk" are significant benefits of the toolkit.
- To improve adoption and acceptability of the toolkit, it needs to be modified to better fit the needs of the prescribers.
- Exploring ways to improve the timing (i.e. speed) of firing the alert will improve fit of the alert with provider workflow.
- Integration with other information contained in the EHR is needed to target when the alert fires to providers to reduce unnecessary firing.
- Developing methods to discuss naloxone use with patients and to reduce stigma associated with use are needed. It is unclear how these discussions will impact provider workflow.

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